

CLAIMS

1. An agglomerate comprising fine primary particles of an inorganic compound except for silica, the agglomerate satisfying the following expressions (a) to (e):

$$(a) \ 0.5 \leq dp_{50} \leq 20 \quad [\mu m]$$

$$(b) \ 0 \leq \alpha \leq 2.5 \quad [-]$$

$$(c) \ 30 \leq Sw \quad [m^2/g]$$

$$(d) \ 20 \leq St \leq 150 \quad [MPa] \text{ and}$$

$$(e) \ 200 \leq Sta \leq 600 \ [MPa],$$

wherein

dp_{50} : the average particle diameter [μm] of the agglomerate measured by Microtrac-FRA, a laser analysis type particle size distribution measurement apparatus,

α : the value calculated by dividing the difference between the particle diameter d_{90} of cumulative 90% minus sieve particles of the agglomerate and the particle diameter d_{10} of cumulative 10% minus sieve particles of the agglomerate calculated by the Microtrac-FRA, a laser analysis type particle size distribution measurement apparatus by the average particle diameter dp_{50} according to the following equation:

$$\alpha = (d_{90} - d_{10})/dp_{50},$$

d_{90} : the particle diameter of cumulative 90% minus sieve particles of the agglomerate measured by the Microtrac-FRA, a laser analysis type particle size distribution measurement apparatus,

d_{10} : the particle diameter of cumulative 10% minus sieve particles of the agglomerate measured by the Microtrac-FRA, a laser analysis type particle size distribution measurement apparatus,

S_w : the BET specific surface area of the agglomerate [m^2/g],

S_t : the tensile strength [MPa] required to break the agglomerate with the particle diameter $4\ \mu m$, measured by a micro compression testing machine manufactured by Shimadzu Corporation, and

S_{ta} : the tensile strength [MPa] required to break 30% of the particle diameter of the agglomerate with the particle diameter $4\ \mu m$, measured by a micro compression testing machine manufactured by Shimadzu Corporation.

2. The agglomerate according to claim 1, wherein the agglomerate satisfies the solidified apparent density satisfies the following expression (f):

$$(f) \ 0.2 \leq \rho_{bp} \leq 0.8 \quad [g/cm^3],$$

wherein

ρ_{bp} : the solidified apparent density [g/cm^3] of the agglomerate powder measured by a powder tester manufactured by Hosokawa Micron Co., Ltd..

3. The agglomerate according to claim 1 or 2, wherein the

agglomerate is surface-treated with at least one kind selected from aliphatic acids, alicyclic carboxylic acids, aromatic carboxylic acids, their sulfonic acids and resin acids, their metal salts, ammonium salts, amine salts, esters; aliphatic, alicyclic, and aromatic sulfonic acids; coupling agents; silicone oils; paraffin; copolymers of α,β -monoethylenically unsaturated carboxylic acids and monomers copolymerizable with α,β -monoethylenically unsaturated carboxylic acids, their metal salts ammonium salts, amine salts, esters; phosphoric acid esters; and industrial soaps.

4. The agglomerate according to any one of claims 1 to 3, wherein the agglomerate comprises calcium carbonate.

5. A resin composition containing a resin mixed with the agglomerate according to any one of claims 1 to 4.

6. The resin composition according to claim 5, wherein the resin is selected from polyolefin resins, polyester resins, polyamide resins, polyvinyl chloride resins, and biodegradable resins.

7. The resin composition according to claim 5 or 6, wherein the resin composition is in the form of a film, a sheet or a fiber.